INSTRUCTIONS

PUMP DRIVE GEAR ASSEMBLY

GE 7FDL DIESEL ENGINES

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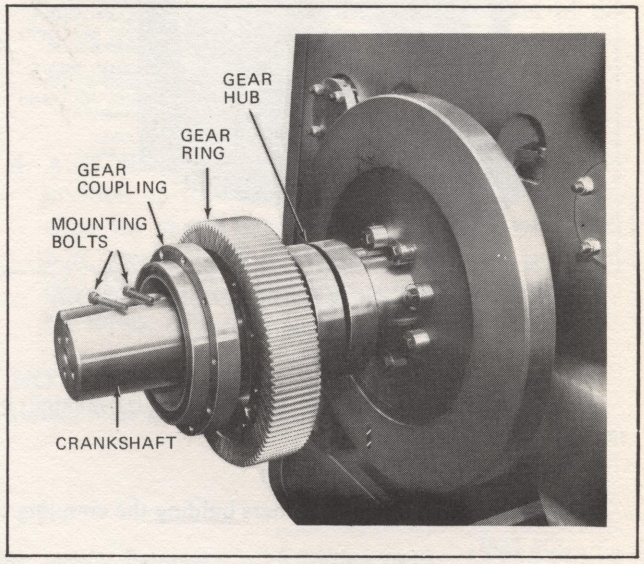

FIG. 1. TYPICAL PUMP DRIVE GEAR ASSEMBLY.

FIG. 1, E-14932

DESCRIPTION

The pump drive gear assembly is mounted on the crankshaft and is used to transmit the torque, needed to drive the water and lube oil pumps, from the crankshaft to the pump idler gear. The assembly consists of the following basic parts (See Fig. 1):

1. Gear hub
2. Gear ring
3. Gear coupling.

The gear coupling is made of two basic parts, the clamp ring and the coupling, which are put together with a press fit. The coupling has an inner flange and an outer sleeve held together with a bonded resilient material (See Fig. 2).

COUPLING INSPECTION

If the rubber-bonded gear coupling is suspected as being faulty (such as after an unexplained low-oil or low-water shutdown), remove the lube-oil fill assembly from the left side of the forward-end cover. Using a pry bar to engage the gear teeth, attempt to rotate the gear. A small movement of the gear, followed by a snap-back to original position when the pry-bar force is removed, indicates the coupling is in good order; free rotation of the gear indicates a defective coupling that must be replaced.

NOTE: *Starting in late 1974, three sets of match-mark numbers are being applied to the back faces of the gear hub and gear ring. See Figs. 3 and 4. These numbers can be observed using a flashlight and mirror, after first removing the lube oil fill assembly. Misalignment of the match-mark numbers indicates a defective coupling that must be replaced.*

COUPLING REPLACEMENT

NOTE: *To gain access to the coupling, it is first necessary that the barring-over hub, pointer and guard be removed from the forward end of the engine. It is also necessary to remove the lube oil fill assembly from the left side of the forward end cover, and remove the bearing from the forward end cover.*

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

Verify numbers for parts, tools, or material by using the Renewal Parts or Tool Catalogs, or contact your General Electric representative for assistance. Do not order from this publication.

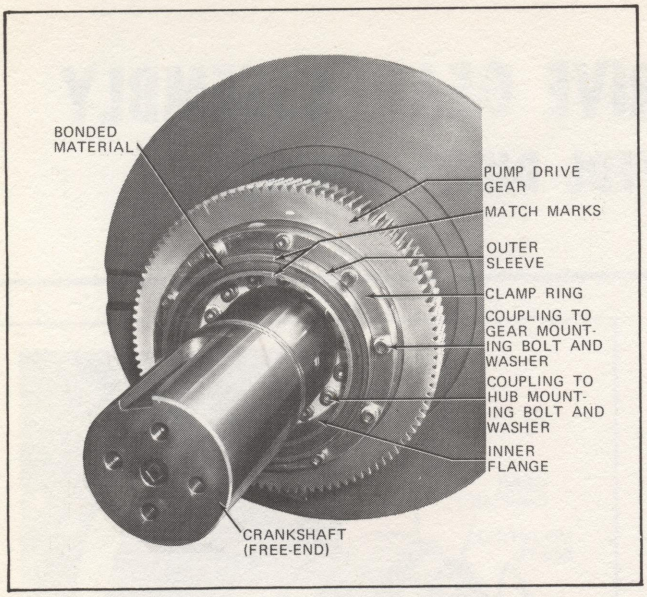

FIG. 2. FRONT VIEW OF PUMP DRIVE GEAR ASSEMBLY.

Thru the opening around the crankshaft, created by removing the bearing:

1. Remove the bolts and washers holding the coupling to the gear.

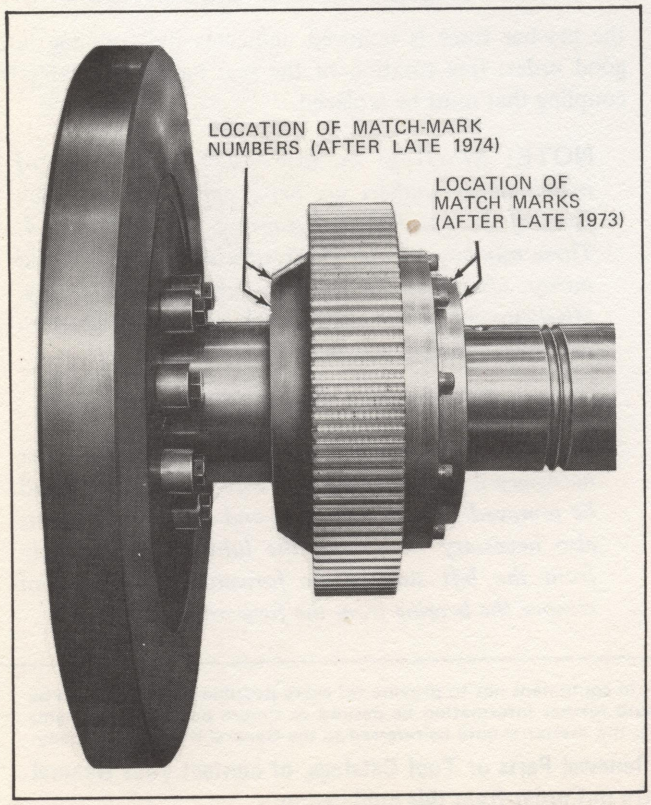

FIG. 3. SIDE VIEW OF PUMP DRIVE GEAR ASSEMBLY.

2. Remove the bolts and washers holding the coupling to the hub.

3. Remove the defective coupling, install a new coupling, and secure to hub and gear with bolts and washers. Tighten bolts to the torque value given in the DATA section.

NOTE: *It may be necessary to bar the engine, or rotate the gear, to achieve bolt-hole alignment and, with newer hub and gear, alignment of match-mark numbers on the back face of the hub and gear. See Figs. 3 and 4.*

4. Replace forward-end bearing, other parts removed from the forward end of the engine, and the lube oil fill assembly.

GEAR DISASSEMBLY AND REMOVAL

NOTE: *The forward-end cover and its associated parts must be removed before work can be done on the pump drive gear assembly.*

1. Remove the bolts and washers holding the coupling to the gear.

2. Remove the bolts and washers holding the coupling to the hub.

3. Slip the coupling from the crankshaft.

4. Slide the gear off the hub and remove from the shaft.

5. Apply a soft flame directly to the gear hub, causing it to expand and allow removal.

CAUTION: *Do not apply excessive or prolonged heat which may damage the hub or the crankshaft.*

WARNING: *To prevent injury, use suitable hand protection when sliding expanded hub from crankshaft.*

FIG. 2, E-14933A

FIG. 3, E-14934A

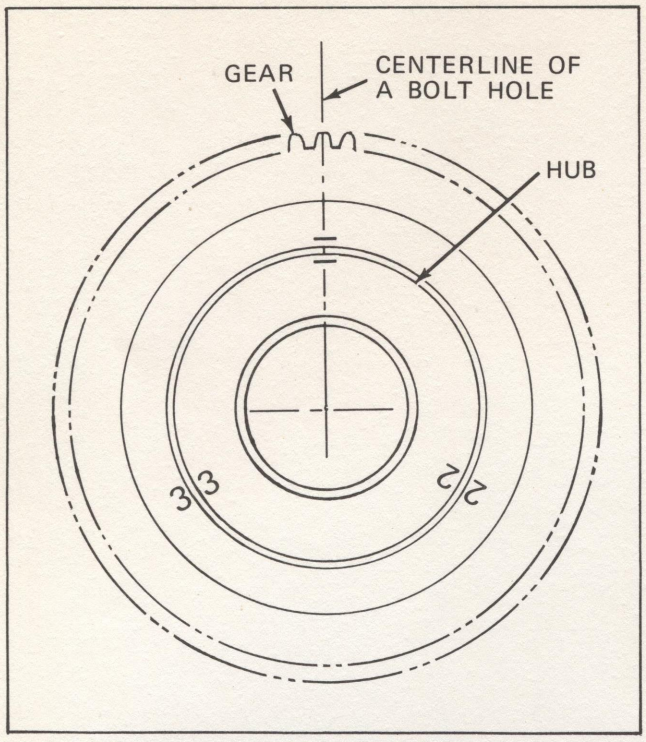

FIG. 4, E-21433

FIG. 4. MATCH-MARK NUMBERS ON BACK (FRAME) SIDE OF HUB AND GEAR.

REASSEMBLY
(See Figs. 1, 2, 3)

NOTE: *The vibration damper cannot be removed or installed with the pump drive gear hub in place. Complete all vibration damper work before installing the pump drive gear hub.*

1. Thoroughly clean the end of the crankshaft.

2. Heat the gear hub approximately 132 C (270 F) above the ambient temperature. Heating may be done in an oven or in heated oil.

CAUTION: *Do not exceed 190.5 C (375 F).*

3. Using hand protection, quickly apply the heated gear hub to its correct position on the shaft. The hub should set firmly against the larger diameter of the shaft used to mount the vibration damper and have the tapped holes facing away from the main frame.

4. After the hub has cooled, set the drive gear in position on the hub and, with newer hub and gear, * align the match marks. Using a washer with each bolt, secure the gear coupling to the hub and gear. (See NOTE.) Coupling bolts should be tightened to the torque value given in the DATA section.

NOTE: *The flat sides of the gear and coupling should mate with each other.*

DATA

	In.	mm
Hub inside diameter. . .	5.2505-5.2490	133,36-133,32
Hub to crankshaft, interference	0.0045-0.0015	0,1143-0,0381
Hub to gear, clearance, new	0.0105-0.007	0,2667-0,1778
worn limit	0.012	0,305

Torque values:	lb.-ft.	N·m
Bolts, coupling to hub	44-49	59,65-66,43
Bolts, coupling to gear.	44-49	59,65-66,43

*Revisions are indicated by marginal bars.